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Annex to the International Preliminary Examination Report

Claims

- Sub 34
1. A method for applying thin coatings or layers of a viscous fluid onto plane substrates, in particular for forming bond layers between partial substrates (S1, S2) or coatings of lacquer on substrates thereby using a dosing pump (1) for the coating material (7), a dosing arm (2) which is movable over the substrate (S1), and a rotary drive (3) for rotating the substrate (S1) and by regulating the layer thickness to a desired value, wherein a regulator means controls the controlled variables for the dosing pump, the dosing arm and/or the rotary drive thereby taking into account the influence of varying variables (disturbance variables).
 2. The method according to claim 1, characterized in that the disturbance variables which are taken into account are the temperatures (T1, T2) of the respective substrates (S1, S2) and the temperature (T3) of the coating material (7).
 3. The method according to claim 1 or 2, characterized in that the influence of the disturbance variables is determined empirically.
 4. The method according to claims 1 to 3, wherein a connecting means (4) for connecting the substrates (S1, S2) after the formation of bond layers and a rotary centrifugal drive (5) for spinning off excess bonding material between the substrates (S1 and S2) after connection are controlled as further controlled variables.
 5. The method according to claims 1 to 4, characterized in that the coating/bonding is controlled by a PC/SPS (personal computer with programmable system) program.
 6. The method according to claim 5, characterized in that the dosing pump (1), the dosing arm (2), the rotary drive (3), the connecting means (4) are operated by step motors and that the rotary centrifugal drive (5) is a servomotor.

7. The method according to ~~any one of claims 1 to 6~~, characterized in that the thickness of the coating/bond coating is measured during the process in a non-contacting manner and that deviations from the desired value are readjusted automatically.
8. The method according to claim 7, characterized in that the desired value is a predetermined coating thickness range in the radial and tangential directions of the substrate.
9. The method according to claim 7 ~~or 8~~, characterized in that the sensor is an optical sensor.
10. The use of the method according to ~~any one of claims 1 to 9~~ in the production of optical storage disks.
11. The use according to claim 10, characterized in that at a desired value of the bond layer thickness of 55 μm , the deviation or tolerance of the bond layer thickness is $\pm 10 \mu\text{m}$ in the radial direction and $\pm 4 \mu\text{m}$ in the tangential direction.
12. A device for carrying out the method according to ~~any one of claims 1 to 9~~ comprising
- (a) sensors for measuring disturbance variables during coating/bonding of substrates,
 - (b) a means for measuring the thickness of the coating/bond coating during the process, and
 - (c) a processor for controlling coating/bonding in accordance with the disturbance variables and the measured thickness of the coating/bond coating by means of a controllable dosing pump (1), a dosing arm (2) and/or by means of a rotary drive (3, 5).

REPLACEMENT SHEET